

Abstract of the Disclosure

PRESSURE MODULATED COMMON RAIL INJECTOR AND SYSTEM

Common rail fuel injectors typically have difficulty in changing an injection rate during an injection event. Fuel injectors for this common rail fuel injection system include a multi-position admission valve. The admission valve is stoppable at a middle position to inject fuel at a low rate. The lower rate is accomplished by leaking some fuel to drain to reduce injection pressure. The admission valve is also stoppable at a fully open position to inject fuel at a high rate. Fuel injection events are ended, and the fuel injectors maintained between injection events, with the admission valve member in contact with a supply seat to close the high pressure supply passage. This strategy can be used in conjunction with a spring-biased needle valve member to expand fuel injector capabilities.